

THE B&O MODELER

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NOVEMBER/DECEMBER 2005



**Branchline Trains HO 8-1-2 Pullman, B&O Class S-4
AC&F 70' Steel Baggage Car in O Scale, B&O Class B-8aa
F&C HO M-53 Wagon Top Boxcar**

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Cover Photos – Top, S-4 Pullman – Dan Vandermause photo. Middle, B-8aa Baggage Car – Ed Bommer photo. Bottom, M-53a Boxcar – Doug Kisala photo.

AN INVITATION TO JOIN THE B&O RAILROAD HISTORICAL SOCIETY

The Baltimore and Ohio Railroad Historical Society is an independent non-profit educational corporation. The Society's purpose is to foster interest, research, preservation, and the distribution of information concerning the B&O. Its membership is spread throughout the United States and numerous foreign countries, and its scope includes all facets of the B&O's history. Currently the Society has over 1600 registered members.

Members regularly receive a variety of publications offering news, comments, technical information, and in-depth coverage of the B&O and its related companies. Since 1979, the Society has published a quarterly magazine, *The Sentinel*, dedicated to the publication of articles and news items of historical significance. Other Society publications include monographs, calendars, equipment rosters, and reprints of original B&O source material. Their

purpose is to make otherwise unobtainable data available to the membership at reasonable cost.

Membership in the Society is a vote of support and makes all of the Society's work possible. It provides those interested in the B&O with a legitimate, respected voice in the railroad and historical communities. By working together, B&O fans are able to accomplish much more than by individual efforts. No matter how diverse your interests or how arcane your specialty, others share your fascination with America's most historic railroad. We invite your participation. Several classes of [annual memberships](#) are available. Regular memberships are only \$35.00. If you would like to join, click [here](#) to fill out our [membership application](#), print a copy and mail it to:

**B&ORRHS
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P.O. Box 24068
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FROM THE EDITOR

So how was my first Society convention? Well the drive up went well and the scenery was spectacular. I had to leave the meeting early, but the part I was able to stay for was great. The number of models in the contest was fewer than I had expected, but the presentations about modeling were excellent, worth the price of admission. It was especially great to meet many of the folks I have interacted with over the internet for the past several years. Hope to see some more models and modelers at next year's meeting. I would also love to see some more

presentations on modeling, so if you aren't shy consider sharing what you've learned while modeling at the next convention.

The first article on a wagon top boxcar appears in this issue. Being a signature B&O car with many variations in terms of modeling techniques and prototype variations, I am sure it will be followed by many more. I am working on an HO M-151 wagon top boxcar right now. I am sure others of you out

there are working on similar wagon top projects, so think about sharing those efforts with the rest of us.

A reminder, we still need an editor for our Model Products News. This is a great chance to

communicate with the Historical Society's Model Committee and the manufacturers to find out what's new and write about it.

B&ORRHS ANNUAL CONVENTION MODELING COVERAGE

The promised coverage of the Modeling Contest is not all that I hoped it would be. Part of this is due to the format, which incorporates anonymous entries and the fact that I had to depart Staunton before all the votes were counted. I did manage to get digital

photographs of the entries (with help from Lance Thackrey). If the contest entrants contact me at bruce_griffin@earthlink.net, I would be happy to update the web version of the magazine with the details of each entry.



HO Scale P-7 by Bill Barringer



HO Scale Auxiliary Water Tank



HO Scale NKP Car Co. Class A-18ec Coach by Bruce Elliott (Article Coming)



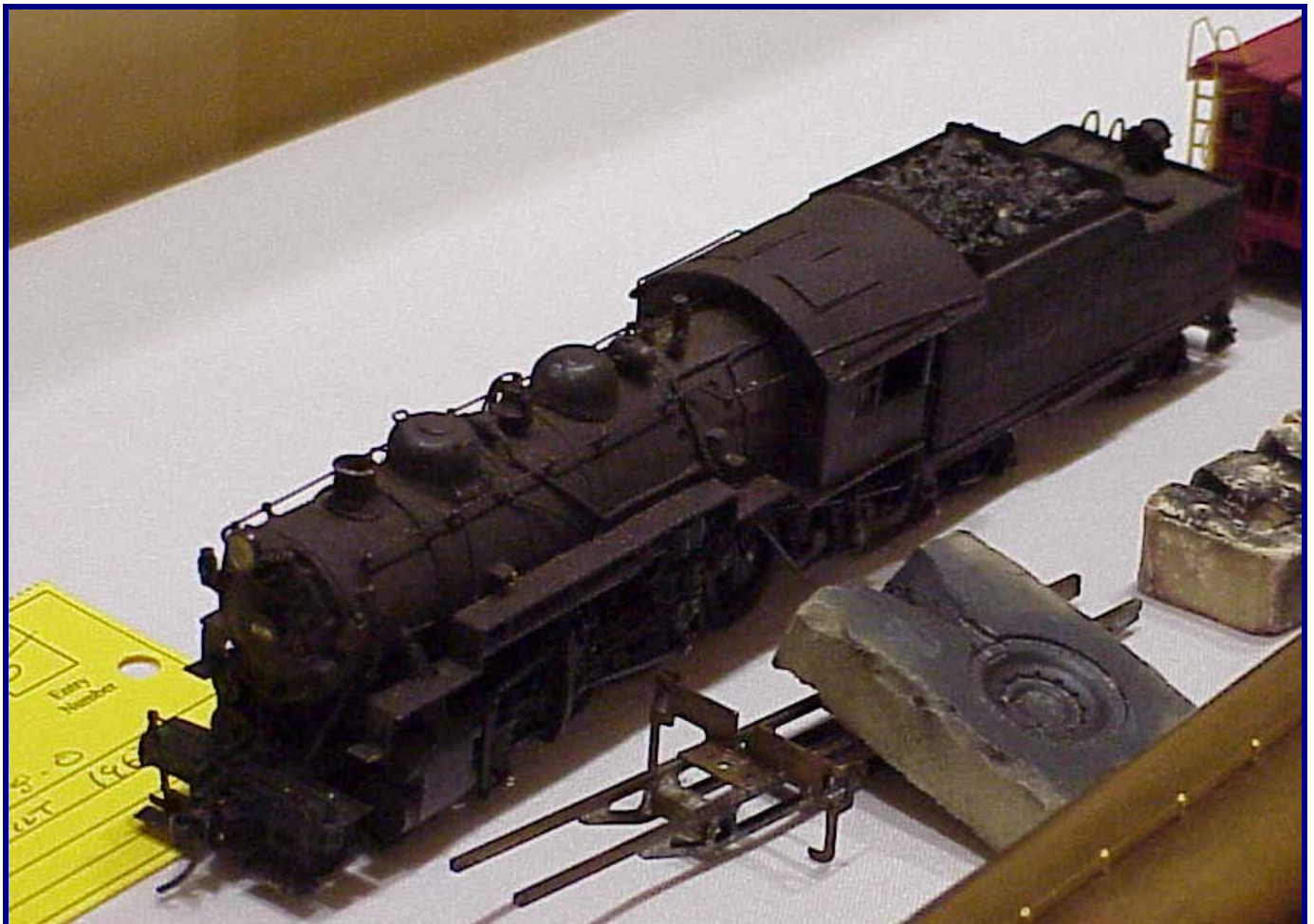
HO Scale C-17 Express Car by Greg Smith (Article Coming)



HO Scale I-5 Caboose



HO Scale



HO Scale



HO Scale Carfloat #199 by John Teichmoeller (Article Coming)



S Scale



M-53 Boxcar



O Scale M-24a Cement Service Boxcar



O Scale Flanger SF-43



O Scale Privy

DID YOU SEE IT?

ROSS POLLOCK

Information pertaining to the B&O recently appearing in the press.

Due to time constraints we were not able to pull this information together prior to initial internet publication. When the gang working on this section of the magazine is able to pull it all together, it will be added to the online version of this publication. Sorry for the delay.



Ted Colutta Collection, Date unknown.

NEWS FROM THE COMPANY STORE

BY GEORGE STANT

The Company Store is excited to announce a limited run of B&O aluminum over blue Sentinel Service M-55c ready to run boxcars. Our vendor had taken some excellent Intermountain boxcars and applied an M-55c finish that looked really good to a non-expert. To help the Society determine if it was a good enough rendering to be sold through our Company Store, I asked one of our Society B&O equipment experts, Jim Mischke, to review the new product and provide us with an evaluation. Jim gave the model a “thumbs

up” as being the closest available model of a Sentinel Service M-55c boxcar produced to date.

Prototype Background – The B&O bought 500 class M-55c boxcars in 1945, numbered 466000-499. Tight clearances in the Parkersburg Subdivision tunnels between Parkersburg and Grafton forced B&O to specify 10’-0” inside height boxcars such as the M-55c for their 40-foot single door boxcar fleet, to ensure unrestricted system wide use. Any boxcar

higher or longer risked leaving hardware behind in those tunnels, or causing a derailment. In 1947, the first hundred M-55c road numbers (466000-99) were selected for application of a special aluminum over blue promotional paint scheme advertising Sentinel Service. Photo evidence suggests several other cars in the remaining 400 car fleet also received this paint treatment.

Sentinel Service was not a train. It was actually a car tracing system composed of clerks, telegraph messages, and baling wire, indeed, a data sharing network forty years before the computer networks of today. Shippers subscribing to this service could locate their cars any time, night or day, by calling the railroad. This premium service rolled out in early 1947. After some initial publicity photographs depicting entire trains composed of aluminum over blue boxcars, these special cars scattered in service as soon as the company photographer put the camera away. They could be seen as single cars anywhere on B&O and the nationwide rail network in general freight service. A B&O memo dated in 1958 ordered the end of maintaining this scheme by B&O car shops, and all cars were thereafter repainted in current red freight car colors in due course.

Model Assessment - No HO model manufacturer has ever produced an exactly accurate aluminum over blue Sentinel Service M-55c boxcar. However, this product provides a pretty good example. This Intermountain boxcar is a scale 10'-0" inside height car, has a seven foot door opening, and has Youngstown doors; it does not, however, have the unique M-55c ends and an M-55c roof. That said, it is considered the closest available model boxcar to a prototype B&O M-55c that has been produced to date.

The society has 6 different road numbers in stock, all considered to be within the range of the original M-55c. The vendor indicated that none of the numbers had been previously used by other models. If you are interested in obtaining one of these boxcars, please go to the BORHS Folder in the files section of the B&O Yahoo Group for ordering information, or send an email to sales@borhs.org. These ready to run models sell to members for \$29.95 plus shipping and handling. Maryland residents must add sales tax. They retail for over \$33.00 to non-members. Again, the Society has a limited quantity to sell so if you are interested, you should act fast. The vendor indicates that this is a limited order and when sold out, no additional runs are anticipated.

MODEL PRODUCT NEWS

EDITOR NEEDED

Model Tech Studios – HO Scale Point of Rocks Station

Model Tech Studios is offering a "limited re-release" of their HO scale Point of Rocks Station. This historic structure sits at the junction of the Old Main Line from Baltimore and Metropolitan Branch from Washington. The kit is available online at:

<http://mts.inline.net/merchant.ihtml?id=2&step=2> .



Model Tech Studios Photograph

Walthers Heavyweight Coach

This is the latest offering, in their first run of passenger cars, and is the car that B&O fans have been waiting for. This car was built from Pullman plan 2882-B for the B&O. Walthers does not indicate specifically the B&O class, but does refer to it as based on a B&O prototype. The car is a B&O Class A-18, however, a couple of discrepancies arise as decorated in the Blue and Gray scheme. The Walthers model seems to represent an as-built car, with 80 walk-over type seats. Because the car also has air conditioning, I started to look for a sub-class designation. To date, I have found no records of original A-18's with a/c, yet the car is painted Blue and Gray, indicating the car was air conditioned. What sub class would this car be?

Records show A-18b's with a/c, but I have no documentation as to whether the car was Blue with Dulux Gold stripes or Blue and Gray. However, I do have documentation of A-18c's in Blue and Gray, at Grant St. station in Pittsburgh, Pa. However, there is one difference between an A-18, and an A-18c. The difference is that the men's lavatory window on the left side of the car has to be blanked out. This window was on the left end of the car in the photo

below. The left side is identified by the 145 gallon pressurized tank on this side of the car. On my model (photograph below), this was simply done by taking a pair of scissors and cutting a panel out of a .010 styrene sheet, to fill in the window and painting it Floquil D&H gray, which was almost a perfect match. To secure the patch to the body, I placed the panel over the window, and used a 000 brush with D&H gray, and used the paint, down the seam to secure the patch. Now here is the interesting thing about Walthers model, the numbers that they supply with the decorated model are correct for an A-18c only.

As with the other Walthers heavyweights, the car features metal wheels and sprung knuckle couplers, and has a large portion of the underbody detail present. Cut levers and grab irons need to be added, and are supplied with the car. The interior is painted and is set up for a drop in lighting kit. Being a coach, this car will negotiate a slightly tighter radius than the Pullmans, but I would not recommend it. If one purchases an undecorated version of this car, it could be painted blue, with the Dulux Gold stripe and lettering and numbered as an A-18b.

Bruce Elliott



HO Scale Class A-18c Coach #5261 Bruce Elliott Photograph

Model Industry News

Walthers has purchased the Life-Like Products train and toy business and will be the sole distributor for their products. Look for Heritage, Proto 2000, and Proto 1000 as manufacturer number 920 on the Walthers web site and in their catalogs. The rest of the Life-Like line is still manufacturer number 433.

Challenger Imports has ceased operations for an undetermined period of time, maybe permanently. None of the projects previously announced, including the heavyweight Capitol Limited, will be completed.

C-D-S Dry Transfers in going to sell off their inventory and retire. The business is for sale if you have an entrepreneurial bent. Otherwise, they will continue to ship as long as they have inventory but will not print more. They make several fine sets of B&O box car dry transfer sets. C-D-S Lettering Ltd, P O Box 65074, Nepean, Ontario K2G 5Y3. Their E-mail is cds_lettering_ltd@sympatico.ca.

ROCO, the model train manufacturer based in Austria, has filed for bankruptcy. They are a major manufacturer of model railroad equipment for the European market but also sell in the United States. In

addition to their own brand they have produced locomotives and rolling stock for Atlas Model Railroads, E&R Models, Life Like, and Walthers. Production has not stopped totally but has been vastly reduced and many workers have been furloughed.

Eastern Car Works has been shut down temporarily to move the operation to a new location. A start up schedule has not been announced.

Hornby, the British company that purchased Lima and Rivarossi last year has placed them back into production. Walthers has again been named the exclusive distributor of Rivarossi products for the United States. The Walthers web site lists the first items to be forth coming from the new production, which are essentially reruns of existing products. No new items have been announced.

Raymond Stern

UPDATES AND ERRATA

In the September/October 2005 article entitled Modeling the O-27b/ba (and O-41) in HO Scale it is stated that Andrews trucks were outlawed in interchange service in the late 1940s or early 1950s. There was a concern that this information was not entirely accurate and we are searching for definitive documentation on exact dates.

BRANCHLINE TRAINS HO 8-1-2 PULLMAN, B&O CLASS S-4

BY DAN VANDERMAUSE

PHOTOS BY AUTHOR UNLESS OTHERWISE SPECIFIED.



Introduction

Remember way back when – when you had a little allowance or lawn-mowing money in your pocket, and you couldn't wait to spend it at the toy store or hobby shop? The aisles were filled, floor to ceiling it seemed, with plastic model kits by Revell and others. Your funds could cover the cost of a kit, a few bottles of enamel paint, and a new tube of model cement. You might pick an airplane kit, or a model of a

favorite new automobile. No matter what model you chose, you couldn't wait to get it home and begin assembly.

When you opened the box, there must have been about a million plastic parts in there. That was OK – if you took it step by step, and tried not to get too much glue on the outside, you would create a fine

model. And, you had a lot of fun putting that model together!

When was the last time you had that much fun building a railroad model? With the deluge of ready-to-run models with fantastic detail coming to market today, many railroad modelers have lost touch with the joys of model building. So, although we may all populate our HO passenger trains with Walthers ready-to-run cars, don't pass up the opportunity to build one of the Branchline *Blueprint Series* of heavyweight passenger cars.

I recently built an HO Branchline kit for an 8-1-2 (8 section, 1 drawing room, 2 compartment) heavyweight sleeping car. The kit is well-engineered and it is a joy to build. Everything you need to create a super detailed model comes in the Branchline box. I made a few changes to suit my tastes, but even if you build the model exactly as it comes out of the box, you will end up with a model you can be proud of.

The Prototypes

According to Pullman Company Car Construction Records and Car Shop Cards for these two specific cars, Centonia, was sent to Pullman's Wilmington, Delaware shop for repairs in June 1954, withdrawn from lease to Pullman 4/11/56, sent to Government

storage at Granite City, IL on 6/4/59, released from Government storage, dropped from Pullman's records, and sent to scrap 7/11/60. This car was stored at Wilmington from April 1954 until it was sent to Granite City.

Centabella, was withdrawn from active service and Pullman lease in April 1956 and stored at Pullman's Wilmington, DE shop, sent to Government storage at Granite City, IL on 6/4/59, released from Government storage, dropped from Pullman's records, and sent to scrap 7/11/60. This car was stored at Wilmington from April 1956 until it was sent to Granite City.

Apparently, neither of these cars was ever used in limited coach service because they were stored between the time they were withdrawn from Pullman lease (Centonia from when it went into shop storage) until they were released from Government storage. During that time, they would not have been prime candidates for coach service anyway because of the large surplus of 12-1 and 14 section cars with a greater revenue capacity.

In addition, when I purchased my kit at Pro Custom Hobbies in Eldersburg, MD, and they provided this very nice data sheet for this car:

B&O CLASS	S-4
PLACED IN SERVICE	October 29, 1928
BUILT FOR	Service on New York Central
ACQUIRED BY B&O	December 1948, as part of divestiture of Pullman from sleeping car ownership. Leased to Pullman to operate.
DATE STREAMLINED	Never streamlined
DISPOSITION	Withdrawn from service and scrapped April 26, 1956
CONFIGURATION	8 Sections, 1 Drawing Room, 2 Compartments
PULLMAN LOT	6205
PULLMAN PLAN	3979A
TRUCK TYPE	2411
AIR CONDITIONING	York, single overhead unit, installed July 18, 1933
BRAKE TYPE	UC, with one 18" cylinder
ELECTRICAL	32 volts, with two 8-cell battery boxes

The model comes painted in the all-blue scheme, with deluxe gold striping and lettering. There is no indication that these 8-1-2 sleepers were repainted in the blue and gray scheme.



The Model

The **Centabella** is part of Branchline Train's series of heavyweight passenger car kits in HO (<http://www.branchlinetrains.com/blueprint/passengercars/main.htm>). Branchline also offers the 8-1-2 lettered **Centonia** and painted in the all blue scheme. Branchline has announced additional heavyweight sleepers will be released for B&O. These include 12-section, 1-drawing room cars painted blue/gray and named **East Chicago**, **Thendara** and **Midlothian**. Also announced are B&O blue/gray 10-section, 1-drawing room, 2-compartment sleepers named **Lake Erie**, **Lake Lapourde**, and **Lake Vista**. The release of the 12-1 and the 10-1-2 B&O cars has reportedly been delayed due to problems with the painting and lettering.

Assembly

Just like the old Revell airplane kits, when you open the Branchline Trains box, you are looking at about a million parts! But this kit is so well engineered, you will find the assembly to be easy and enjoyable. A super-detailed heavyweight sleeping car appears before your very eyes!

The kit includes parts for interior details, very complete underbody details, and excellent end details. I added window shades and aisle window safety bars, and painted some parts, but otherwise I built the kit according to the instructions. Flush-cutting sprue nippers come in handy for freeing all of the delicate parts from their sprues.

I generally followed the same assembly sequence as the Branchline instructions. Because of the fine tolerances of the parts, and the thickness of the paint

finish, you must often open up the holes with the proper drill bit, to allow the parts to fit without forcing. Garry Spear also provides some excellent assembly tips on his website (<http://varnish.pennsyrr.com/BL01.html>).

Body Core: Install the windows first, and glue the sides to the underframe/ends casting. The Branchline instructions now call for you to move on to the underframe, but I installed the interior details next.

Interior: The interior partitions go together easily. I glued the metal weight into the floor using gap filling ACC. After gluing in the interior, I added window shades and aisle safety bars. Most color photos of B&O heavyweight sleepers show greenish-gray window shades. I used some gray bond paper to make my window shades, but I think the gray is a little too light. The shades were glued to the inside of the sides with Testors Clear Parts Cement. For the aisle window safety bars, I used .010" brass wire, painted aluminum to simulate the chrome plating.

Underbody Details: Now that the interior is completed, return to the underbody. Use a #65 bit to open the holes for the steam line. The center sills must be filed/sanded a bit to provide an easy fit into the underbody casting. Open the holes for the handbrake rod & wheel assembly with a #67 bit. The handbrake wheel and chain assembly does not fit together well – use a #55 bit to open the hole in the handbrake wheel.



Vestibule Steps: Open the mounting holes with a 1/16" bit. Be careful to install the sides of the steps so that the side with the hole (for the cut lever) faces to the end of the car.

Couplers/Air and Steam Lines/Grabs: Drill the bottom plate for the coupler with a #71 bit for the steam and air lines. Drill the lower arm of the steam line with a #76 bit. The side and end grab irons should be glued in with ACC.

Trucks: The Branchline trucks are very nicely detailed, but there is a general problem with the rolling qualities of the trucks. The axle length of the Branchline wheels is too long for the truck, causing the wheels to bind in the bearings. Kadee 36" wheelsets have the same problem as the Branchline wheelsets. Denny Anspach (<http://varnish.pennsyr.com/BLT01.html>) describes substituting Reboxx wheels with 0.990" axles (Reboxx part 36-1-0.990 or 36-2-0.990) to alleviate this problem. I could not find the Reboxx wheelsets, so I solved the rolling problem this way:

First, when you glue the bolster to the truck side frames, don't push the bolster pins all the way into the sideframes. Leave just enough slack to allow the wheels to roll freely. After the bolster has dried overnight, glue the brakebeams into one sideframe only. Cut the mounting pin off of the other end of the brakebeam, and glue a .020" x .030" Evergreen styrene strip to fill the gap between the brakebeam and the other sideframe. Now the trucks will roll freely.

I have not operated my model on a layout yet, so I can't report on the minimum radius for this car, or any underframe modifications necessary to allow operation on specific curves. Perhaps other members could e-mail the editor with their experience in this area. Branchline quotes a minimum radius of 28 inches unless modifications are made to the center sill.



Underbody Parts: Some underbody parts, like the compressor, will require styrene mounting pads. I used Evergreen styrene strip the same thickness as the ribs in the underbody. Use a #64 bit to open the holes for the steam traps, and use a #65 bit for the generator. These kits have been delivered with underbody detail parts that depict a Pullman Mechanical air conditioning system and these cars had a typical B&O York application. Precision Scale Company makes the appropriate York compressor in plastic and brass as well as a suitable underfloor condenser. Centonia is listed in B&O records as having a cooling tower which Pullman typically

placed in a closed off vestibule when they did not have space for a cabinet inside the car.

Diaphragms: The diaphragms look difficult to assemble, but they actually go together quite easily. Although these are not fully operating diaphragms, they do pivot and fill in most of the space between cars.

End Details: Use a #66 bit to open the holes for the coupler yoke. Use a #73 bit to open the holes on the yoke for the safety chains. Finally, a #75 bit opens the holes for the cut lever.



Painting: The roof, trucks and the underbody components are cast in black plastic. The finished appearance of the car can be improved by painting these jet black parts with a gray/black paint. I mixed a 50/50 mixture of Poly Scale Steam Power Black and U.S. Gull Gray Dark. I airbrushed this mixture on the roof, and brush painted the trucks and the visible underbody components. Finally, I weathered the diaphragm plate by first painting it with Grimy Black, followed by dry brushing the black/gray mix noted above, then rust, and finally roof brown.

Conclusion

Don't let all of the above instructions fool you – even with the one million parts in the box, this is an easy and enjoyable kit to assemble. So, as you are assembling your roster of B&O passenger cars, don't forget to build at least one of these great kits. And for you armchair modelers, the high level of detail in this kit makes it a perfect mantel model.

AC&F 70' STEEL BAGGAGE CAR IN O SCALE, B&O CLASS B-8AA

BY EDWARD F. BOMMER

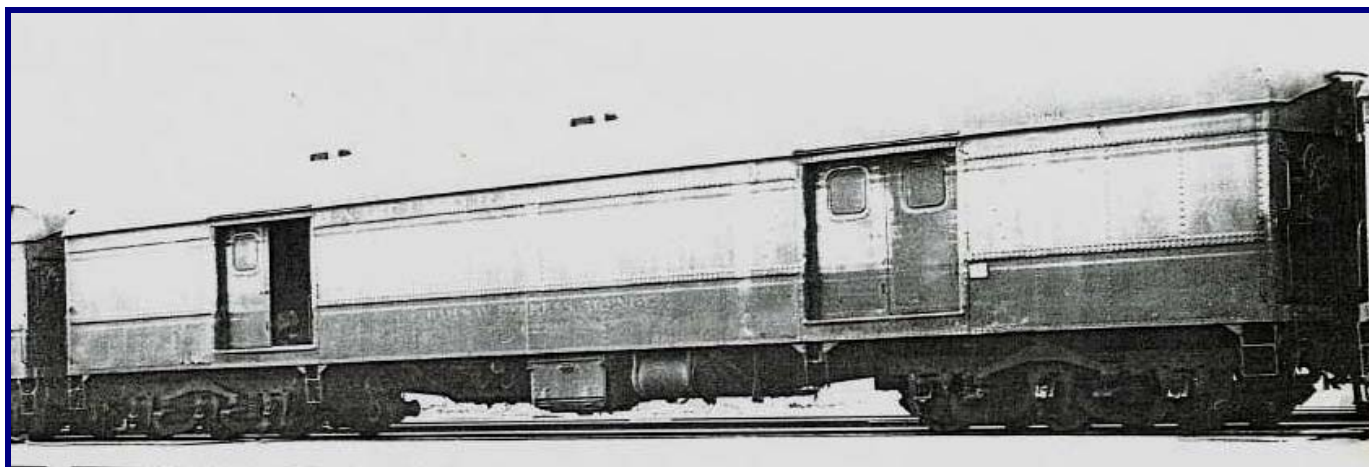
PHOTOS BY AUTHOR UNLESS OTHERWISE SPECIFIED.



The Prototype

The prototype car had been modernized since it first rolled out of the American Car & Foundry St. Charles, MO Shops in 1923. Most notably, it received an arched roof, modern ventilators and new steel, Thermo-pane windowed doors. Class B-8aa Baggage Car 627's claim to fame was its service as the baggage car in the B&O royal train for Queen

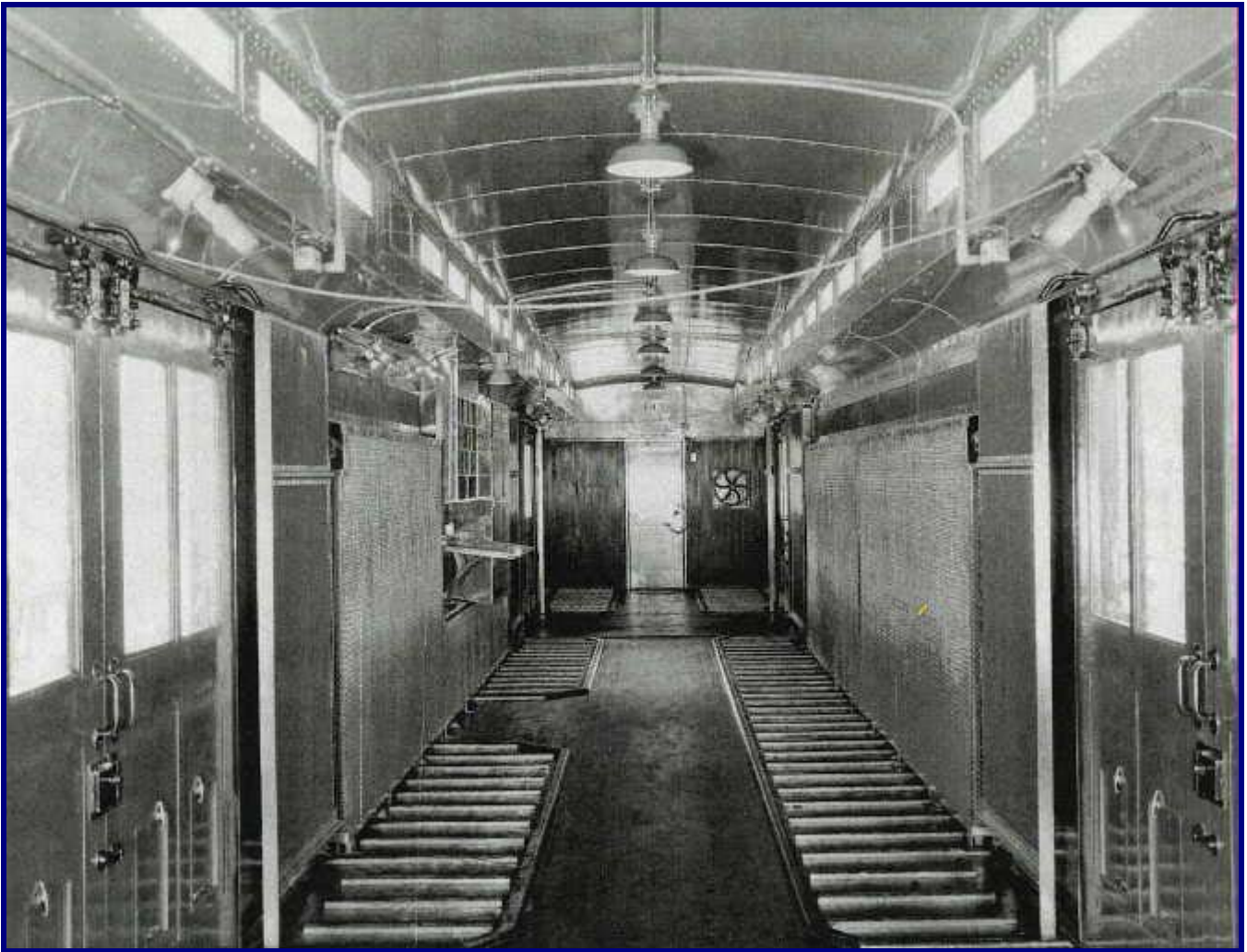
Elizabeth II and Prince Philip over the weekend of October 21, 1957. The special trains (one for the press, another for the royal couple) traveled from Washington DC to Stapleton on Staten Island, New York. They ran as U. S. military "Main" trains, using "POTUS" (President of the US) procedures and rules. See "The Night it was Truly the 'Royal Blue Line'", Fourth Quarter 2004 Sentinel.



B&O 627 in the 1960's. One of the six ventilators on the roof appears to be missing or is covered with snow in this winter time photo. Ralph Barger Collection.

There is no O scale kit that comes close to representing this car. So I built this model with some commercially available parts as well as making my

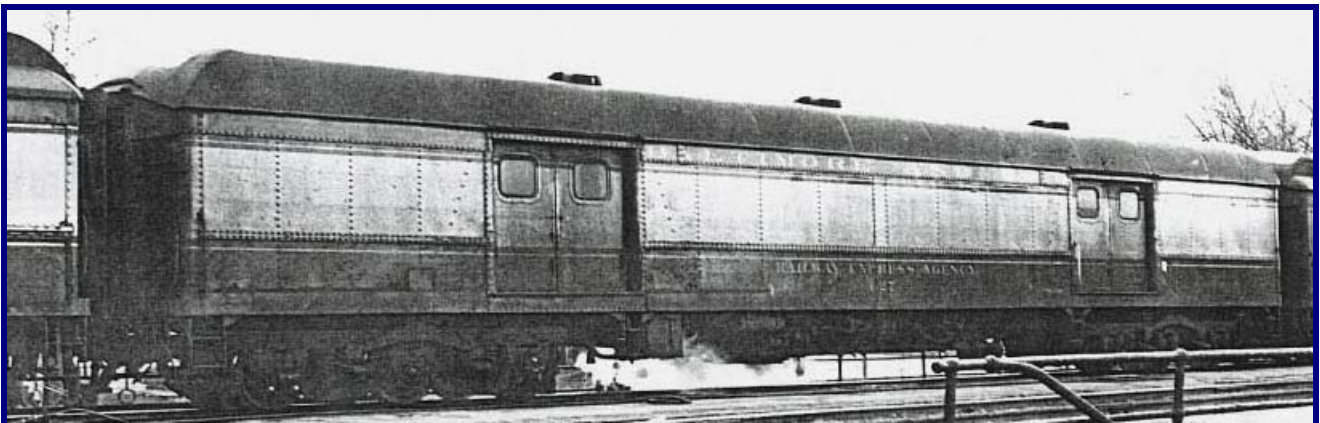
own sides and doors. I will cover some of the techniques used in building and finishing this model.



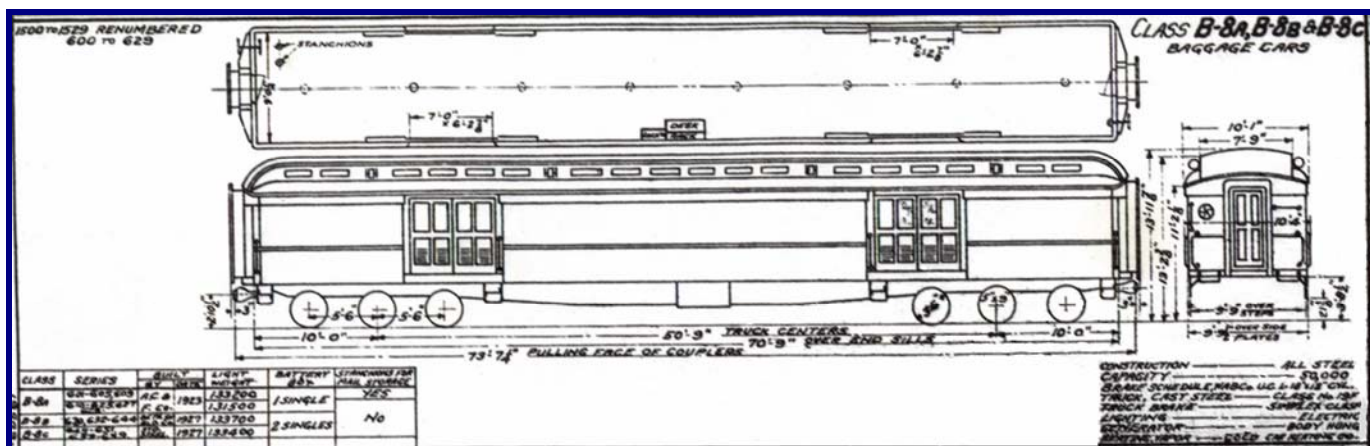
Interior of a B-8 class baggage car, as built. Its' wood floor and wainscot appear to be varnished. The interior ceiling and wall color was "Golden Tan." Note the canvas covers on the sides where steam radiator pipes were located and the door pockets. There is a messenger's desk with a sorting rack and locker. The interior brake wheel was at one end only. The strips on the floor kept packages away from possible wetness as well as making it somewhat easier for the baggage man to pick them up. Jim Mischke Collection.

First, I rebuilt a pair of Walthers 6 wheel Pullman type trucks I had on hand. They are of pre-WWII manufacture. The worn journals were drilled out and fitted with brass tubing for bushings. Three light coats of Dupli-color semi-flat black engine paint

were applied to the parts. I used it because it was on hand. The trucks were lubed and re-assembled. Having them ready in advance helps with checking the layout of underbody details as well as checking how the car runs on the rails.



Opposite side of B&O 627. There are welded patch panels on the lower left of this side and the angled rivet lines beside the doors. Note the corner roof seam. The ends of the roof were made in three panels. The roof ends are not rounded off like on the B&O C-15 class express-baggage cars or the UP/SP/ IC "Harriman" type arched roof. Ralph Barger Collection.



This B&O equipment diagram for the original B-8 class cars provided the basic dimensions. Prototype photos helped in modeling the arched roof and details of the up-dated version of car 627. The diagram tells us that car 627 was originally built by AC&F in 1923 as the 1527. It had a light-weight of 131,500 lbs, a single battery box and no stanchions for mail storage inside. While not shown on the diagram, the distance between the under frame's cross-bearers was determined to be about 22". Jim Mischke Collection.

The roof stock and floor were cut to their proper lengths, adjusting the floor for the thickness of the car end castings. The ends of the roof stock were first trimmed to match the car end sheets. The roof was marked with a center line on top and transverse lines a scale 4' in from each end. A 45 degree angle line was drawn from each corner of the roof stock to the transverse line.

A second set of lines was drawn straight along from where the car end center panels are located. This made three sections on the end of the roof which

were then rounded down on an even curve, taking care not to remove too much material. I used a bench belt/disk sander for that job.

Once the roof ends were correctly rounded off, the car ends were fitted. There was a slight gap which was closed with a narrow, thin piece of sheet wood glued in place on the underside of the roof end with the grain running with the roof stock. These fillers were then sanded down to match the radius of the top of the car end casting.



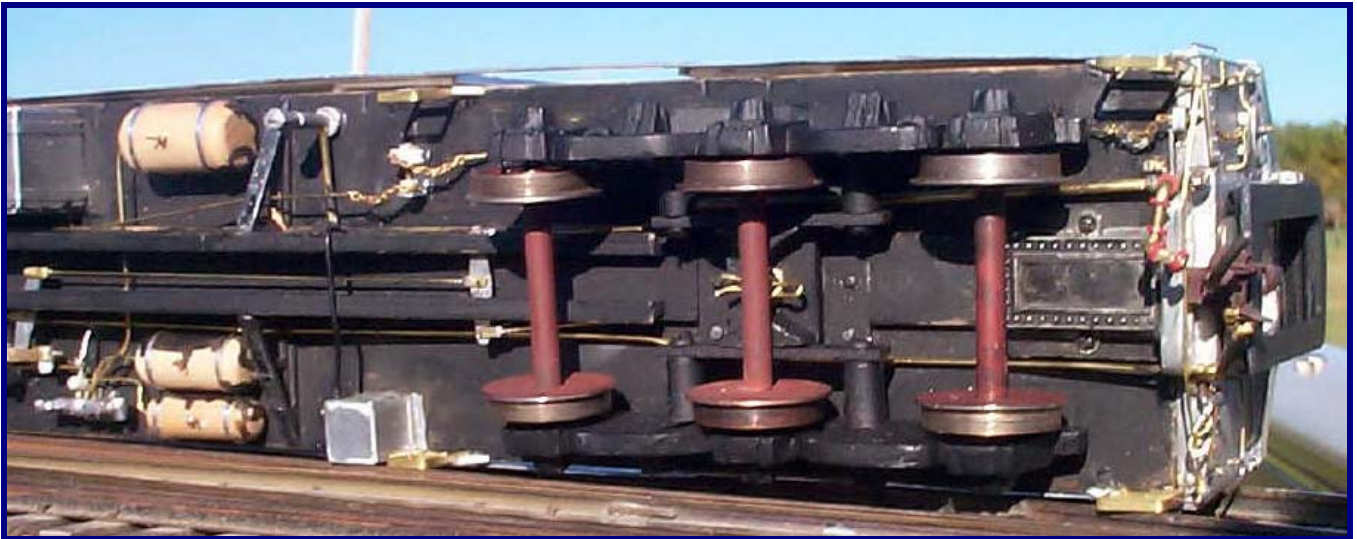
The car roof and end should have a neat, close fit. The cast metal car end was modified to more closely replicate the prototype. The car ends are temporarily mounted with screws. The sides are held in place by the car ends alone at this point. The diaphragm spring is a separate detail casting.

Four coats of sanding sealer were applied to the roof, lightly sanding after the first two coats. Any nicks, dents, or other imperfections were filled with Squadron Green (or white) and sanded smooth. A rub down with fine steel wool followed each of the two final sealer coats. Roof ventilator locations were marked out and the vents installed.

Center lines were drawn along the floor on both sides. At a scale 10' in from each end, a transverse line was drawn. This marked the location of the center axle for each truck. The truck kingpin location was determined and the bolster plates glued to the floor.

The basic under-framing was installed on the car floor. Using the photos and the equipment diagram, I located the positions for the battery box, relay box generator and brake system components. Since I modeled fully detailed brake rigging and piping, slots were cut into the center sill for the brake levers.

At this point, the underside of the floor was given a sanding sealer treatment like the roof, and a coat of flat black paint was applied. This assured there will be paint in those very hard reach places later on, after all the details are mounted.



The trucks on my car date from the early 1940's and use a center kingpin and clip. Newer trucks use an offset hole for mounting them with screws. Brake and other details have been installed on the previously painted underbody. Final painting will cover them.

All underbody details were then applied to the car floor. It's a lot easier to do when it's not on a car! Brake levers were cut from sheet aluminum, steam line, brake piping and rods from brass wire, stirrup steps from flat brass bar stock. The battery and relay boxes are blocks of wood encased in sheet aluminum from a soda pop can. Commercial castings detail the front and rear of the battery box. The relay box door, hinges and latch are scratch made from bits of wire and sheet aluminum.

The brake cylinder is a metal casting to which I added a slack adjuster. The universal valve and brake cylinder were drilled for their piping. The hand brake layout has two sets of wheels over which chains travel. They help multiply the mechanical advantage when using the hand brakes on the car. Reservoirs are wood dowels. Drain cocks are pieces of brass wire soldered to be the handle and outlet. Reservoir straps are strips of sheet aluminum. The generator casting was detailed with suspension springs, mounts and a wire harness. A black paper belt was added after the car was completely painted and assembled.



Car sides were made from strips of aluminum sheet from a roll of roofer's flashing material. A pounce wheel from a Micro-Mark set was used to impress the rivets. To do that, each car side had a paper backing glued on with rubber cement. The rivet lines and weld seams were then drawn on the back side, which is reverse of what one sees in the pictures. Only the

rivets and seams showing on the base panel were impressed. Care was used in starting and stopping each rivet line with the pounce wheel, guided by a steel straight edge over the drawn lines. This assured reasonably even rivets. It takes a bit of practice to make even lines of rivets with a pounce wheel.

Practice on some scrap material helps develop the technique.

Welded patch panel seams were scribed along their lines with a thin screw driver blade. Removing the paper backing helps but the seam lines must be re-drawn directly on the back of the car side sheet before scribing the weld lines.



Next, the doorways are cut out. The opening was scribed with a sharp nail. A Dremel tool with a cut-off wheel then removed that area. The opening is made a scale foot less than the actual doorway. The extra material left at each door post was curled inward, around the handle of a needle file, bringing

the opening to its correct width. The single rivet strip above the doorway was changed to a double row before finishing the car. Rivet embossed overlays are next. First was letter-board area, which is a scale 9" wide, with a line of rivets 1/32" in from each edge. Strips were cut and fitted from each end to the doorway, then between the doorways. Next the rivet embossed belt strip was made the same way but is only a scale 4" wide. It took quite a few tries to make acceptable belt strips! After those it was relatively easy making rivet embossed pieces for over and under the doors, door post cover plates, and gusset plates.

The rivet embossed door posts and gusset plates at the top were added. All these strips are applied using Walthers GOO in the 'contact' method (i.e., letting some solvent evaporate before putting the parts together. It helped to clean the aluminum with some denatured alcohol first, as it tends to have a slightly oily surface from manufacturing.

A strip of 1/8" brass "L" as a stiffener was fitted to the back of each car side. It is mounted the same distance down from the top edge as is the thickness of the bead along the bottom of the roof stock. Where the stiffener passes over the car door openings, it was trimmed away with a Dremel tool and cut-off wheel and glued in place with GOO.



The car ends have a top plate rivet panel that does not line up with the car side. The excess was carved away with a utility knife. The corners of the ends were trimmed parallel on the belt sander and the rivets scraped off. New rivet embossed sheet aluminum overlays were made for the top plates and corner posts.



The car ends are then detailed as shown. The diaphragm is temporarily mounted with tiny dots of glue. The interior brake wheel is on one end only. Note the interior paneling is notched for the car side stiffener angles. There are 30 holes to drill on each end for mounting the various details.

At this point, the ends were temporarily screwed to the car floor, the trucks mounted and the car body given a track test. Any interference found with the swing of the trucks was fixed. The car was also checked to see if it stood level fore and aft, side to side. Some adjusting was necessary by dressing the

bosses on truck mounting bolster plates with a flat mill file.

With the roof in place as well, the car sides were then given a final trim and fitted to their respective sides. There is a right and left side, as determined by the battery box which is on the right side of the car. The interior brake wheel is at the "B" end of the car. Those welded patch panels appear on the left end of the left side of the car, which has the relay box. The roof was then marked for the location of rain gutters over the side and end doors. These are strips of flat brass stock, glued in slots carved into the roof.



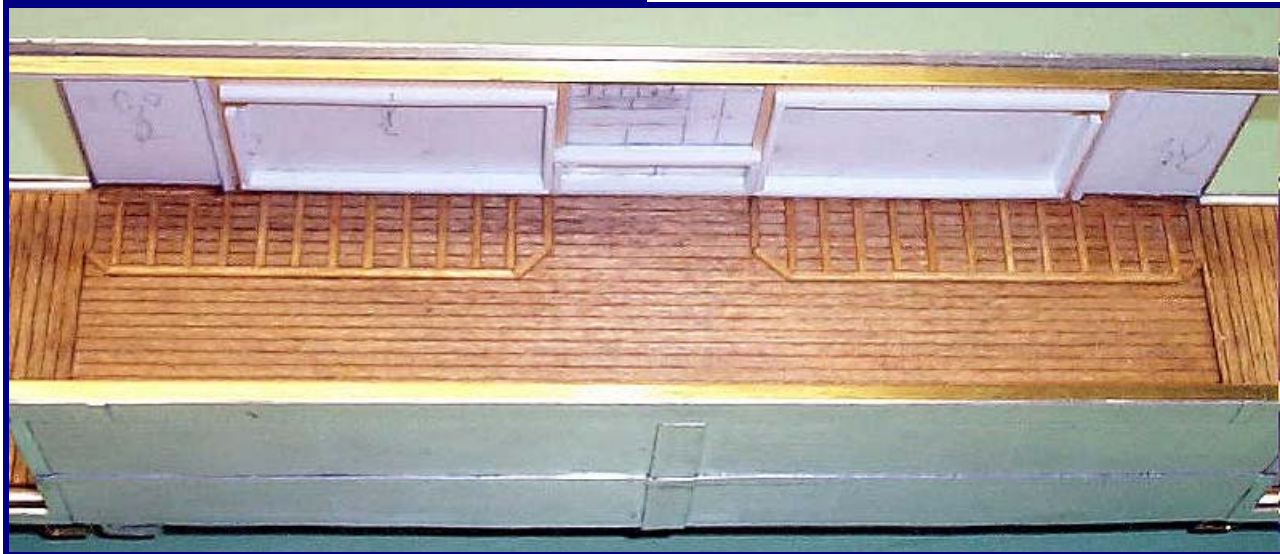
The left side of car 627. The sides are held in place by the car ends. Four pairs of doors were needed for the sides. They slide in slots cut into the floor and fitted under the "L" stiffeners of the car sides.



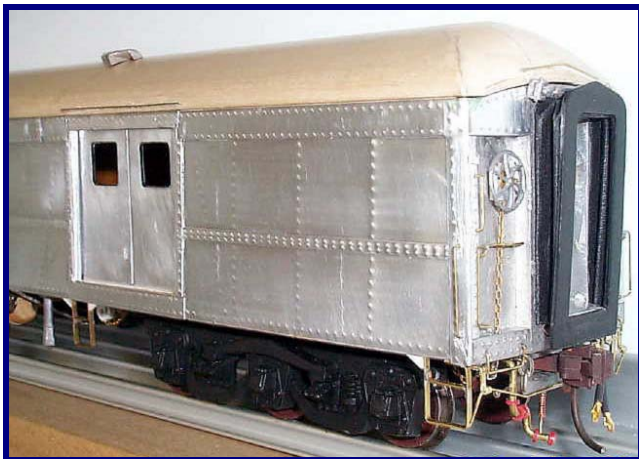
Car doors were made from the same aluminum sheet stock as the car sides. A sheet of .010" styrene was used for the interior of the doors between two metal panels. It is open on top for insertion of a clear .010" styrene sheet glazing after the doors are assembled, painted and detailed.



This sorting rack/cabinet/desk was made from styrene, thin aluminum and wire for handles. It was painted dull silver as the original was made from Monel, a nickel-bearing metal commonly used before stainless steel was developed.



The interior of the car was then made up. The floor was covered with scribed sheet wood in the pattern shown, matching the prototype as shown above. Styrene walls were made for the door pockets. Styrene strip framed out the steam radiator pipe areas on the side walls. The canvas covers for the radiator pipe areas were made from an old, worn handkerchief. Thin sheet aluminum from a soda pop can was cut and fitted to top off the radiator sections on an angle.



All detail work is done and the car is ready for paint and lettering. The interior was painted first, then the exterior. The sides and ends were not permanently installed until after they were painted and lettered. The top of the car roof was given three coats of Duplicolor semi-flat black engine paint. Its low sheen helps it look like a recently shopped car as this model represents. The roof underside had been previously painted Golden Tan.



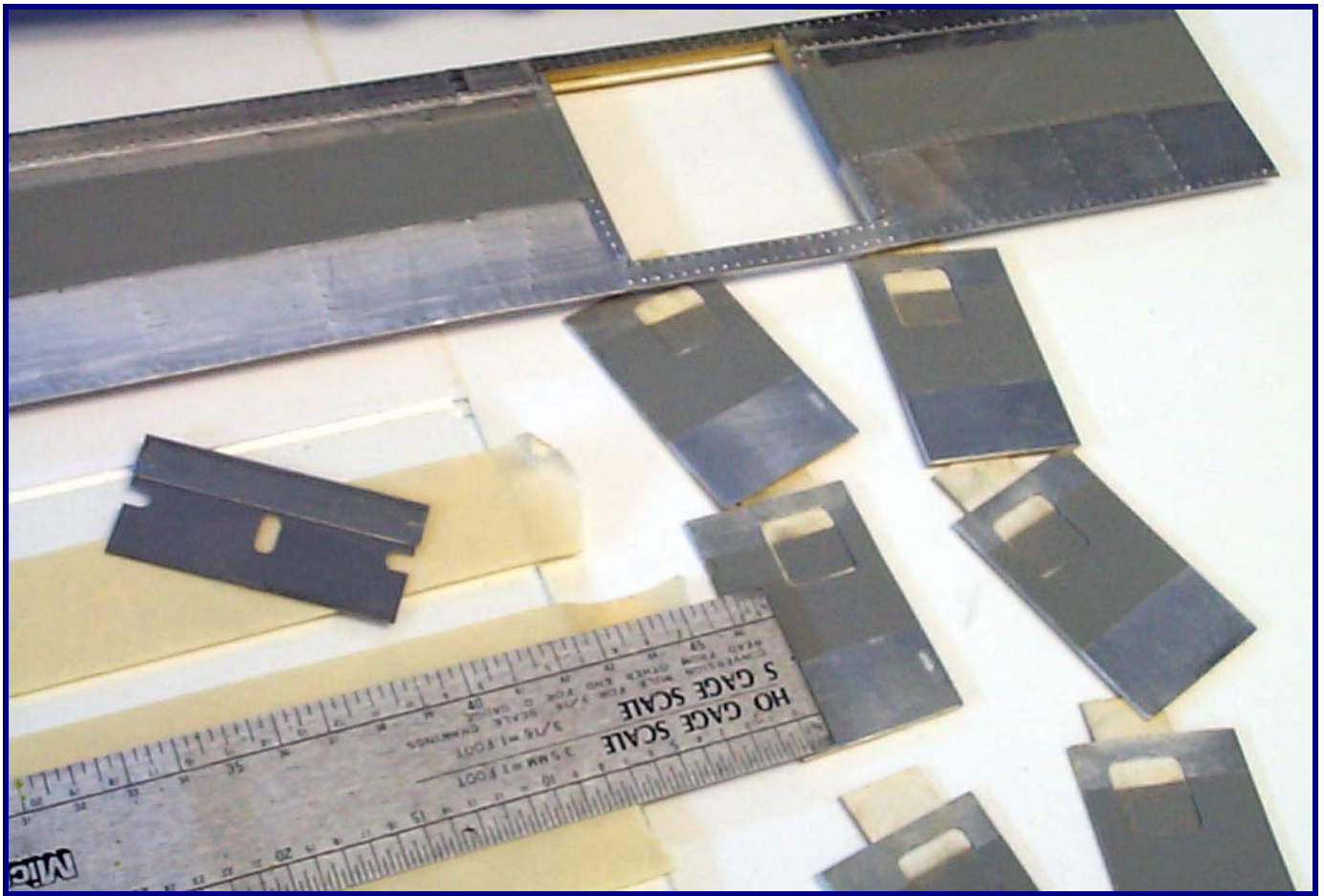
The disassembled car is ready for exterior paint and lots of masking must be done. Doing this in pieces makes the job easier than handling a completely built car. The floor on my car was treated with Min-wax Oak stain. I later learned that it should be painted Tuscan Red. The interior shade of "Golden Tan" was made by mixing Floquil's UP Armour Yellow with a few drops of Depot Buff to darken it a bit.



Some elaborate masking was needed for the underbody, which was sprayed with three light coats of Floquil Engine Black mixed with 1/3 Grimy Black. This gives the underbody a slightly different appearance from the trucks and roof. The car stirrups, faces of the battery box and relay case are covered and will be painted B&O blue.



Interior of model car 627 with Golden Tan paint and details. Compare with the builder's photo of a B-8 interior on page 18.



Sides were masked off for three coats of Scale Coat D&H gray, applied an hour apart. That dark shade will brighten up quite a bit when B&O blue paint is applied. This color was allowed to thoroughly dry for several days before masking and spraying with Scale Coat B&O Royal Blue. Note the cardstock inserts on the doors where clear glazing will be installed after the painting, striping and window gasket detailing is done.



Masked and sprayed parts with Scale Coat B&O Royal Blue paint. Again, three coats an hour apart were applied. Removing the masking can be tricky. It must be done carefully to avoid damaging the paint underneath. Painted parts were left to harden for a week before applying decals.



Champion decals were used for the lettering and striping. Because the name had to fit exactly between the baggage car doors, each letter was applied individually.



The rubber gasket detail around each of the door windows inside and out was done with a black Sharpie laundry marker. Note blue face of the battery box.

On final assembly, the ends and sides were given a light spray of Testors Dull Coat, only shaking the can a little. This was to tone down the shine of the Scale Coat paint a bit. The car ends were then permanently secured to the floor with Walthers GOO and screws. The completed doors had their rubber gaskets detailed with a black Sharpie laundry marker, inside and out by drawing around the edge of the opening. Clear styrene glazing pieces were then inserted into each door. The sides were now GOO'ed into place, along the bottom as well as at the joint with the car

ends, taking care to mount the baggage car doors in their tracks at the same time. The interior door pocket walls were installed last.

One detail remained: the gray paint and decal stripes over the car's corner posts on each end. This was done with a small brush, and touched-up with some Dull Coat to help it match the rest of the car. The roof fits into the car sides snug enough that no fasteners are used. That way it is easy to show off the interior of the car by simply lifting it off.



Left side of the completed model of B&O 627, in 1/4" = 1' O scale.

Bill of Materials

All Nation Line
23W546 St. Charles Road
Wheaton IL 60187

- 1 arched roof stock Number M-395
- 1 floor stock Number M-101, or 1/8" thick bass wood, 3" wide x 24" long.
- 1 universal valve, brake cylinder and generator set Number 1698a (These are

plastic, and have better detail than the cast metal parts I had on hand and used).

1 pair 6 wheel "Pullman" trucks, 36" wheels, Number 3809-K

1 bag escutcheon pins, #24 x 3/8, number 680 (for brake rigging clevis pins and detail anchor pins.).

Keil-Line Products
640 McCullom Lake Road
Wonder Lake IL 60097

1 pair Postal-Baggage car ends, Number 48-362
6 large, 'circular' ventilators, Number 48-235
1 set passenger underbody cross-bearers, Number 48-407
1 pair passenger body bolsters, Number 48-340
1 battery box set (face and back), Number 48-309
1 pair steam traps, number 48-221
1 pair passenger car side stiffeners, 18" "L" Number 48-372
1 diaphragm set, Number 48-225 (I reduced the diaphragms by one fold and modified the striker plates as shown in the photos.).
1 pair diaphragm leaf springs, non-operating, Number 48-028

Scale Coat

B&O Royal Blue paint
D&H gray paint or EL gray paint

Floquil

UP Armour Yellow
Depot Buff (with yellow, to mix B&O "Golden Tan" interior paint)
Engine Black/Grimy Black mix, 60/40 (for underbody)
Tuscan Red (for correct interior car floor color)

Duplicolor

semi-flat black heat resisting engine paint
(for roof, trucks)

Testors

Dull Coat spray

Champion Decals

B&O passenger set P-9D or Micro-scale 48-343

1" dulux striping S-61 or Micro-scale 48-344
5/64" dulux Railroad Roman alphabet LG-50
(for end door outside numbers)
5/64" black Railroad Roman alphabet L-50
(for car end inside numbers)

Evergreen

1 package styrene strips 1/8" x .060"
1 sheet 1/32" thick plain styrene

Various Manufacturers

6" of 16 links per inch brass chain (Precision Scale, Plastruct or Micro Mark)
24" of 1/16" diameter copper electrical wire (steam line)
1 package .030" dia. brass rod (main brake pipe)
1 package .020" dia. brass rod (secondary brake pipes, grab irons)
8" of copper wire strands from some hook-up wire (spring suspension details for steam line ends and generator)
8" of light gauge, stranded hook-up wire with insulation (for battery-relay-generator wiring and battery charging receptacles).
1 package flat brass strip, .025" x 1/16"
1 pair couplers (your choice - I used a set of Old Pullman Delrin couplers with sprung draft gear).
1 roll, .020" thick aluminum roofers flashing (From hardware store, Home Depot or Lowes)
2 or 3 empty aluminum soda pop cans.
1 sheet 1/32" thick, 1/16" scribed siding (wood or styrene)
1 sheet 1/16" thick basswood
1 strip basswood, 1/2" wide x 3/32" thick x 18" long

1 old, worn out linen handkerchief (for interior, canvas covering over radiators)
Sanding sealer
Walthers GOO

F&C HO M-53a WAGON TOP BOXCAR

BY DOUG KISALA

PHOTOS BY AUTHOR UNLESS OTHERWISE SPECIFIED.



HO scale M-53a 380554 from Funaro and Camerlengo kit.

The Prototype

Originally, the B&O developed what is referred to as the Wagon Top design during the 1930's. This series of car designs were made from recycled metal rolled at the company's rolling mill in Cumberland and parts purchased from various manufacturers. The unique design was also intended to reduce car side deterioration by eliminating the roof seam.

The M-53's were 50 ton general service boxcars. Two thousand were built from June 1937 to March 1938, numbered 380000 to 381999. The M-53a cars were built in 1941 and numbered from 385000 to 385999 and had minor differences including additional stiffeners at the roof eaves. According to Sunshine's prototype data sheet, the M-53a "...largely followed the M-53 design. Added rivets at the curvature of the side-roof sheet indicate that

additional stiffeners were added." I cannot visually differentiate between the M-53 and M-53a, if anyone knows the visual difference, please contact the Editor. The November 1982 Mainline Modeler has scale drawing of an M-53 boxcar. F&C includes these drawings in their instruction sheet with permission. Morning Sun's B&O Color Guide to Freight and Passenger Equipment has nice shots of the M-15 and M-53 wagon top subclasses on pages 69-73. According to Sunshine's data sheet, the M-53 cars were built with flat sheet doors and these began to be replaced with other door types after World War II. The B&O also used some M-53s in express service, converting a total of 125 M-53 cars between 1939-1945. The cars were numbered 1900-1999 and 1875-1899. The cars were reconverted to freight service between 1947 and 1959. The express cars got steam and signal lines and additional grab irons.

Year	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954
Cars in Service (M53A in parenthesis)	1886 (997)	1859 (996)	1858 (992)	1852 (991)	1950 (991)	1935 (991)	1944 (989)	1942 (986)	1938 (986)	1933 (984)
Year	1955	1956	1957	1958	1960					
Cars in Service	1929 (984)	1922 (982)	1913 (981)	1905 (979)	1897 (975)					

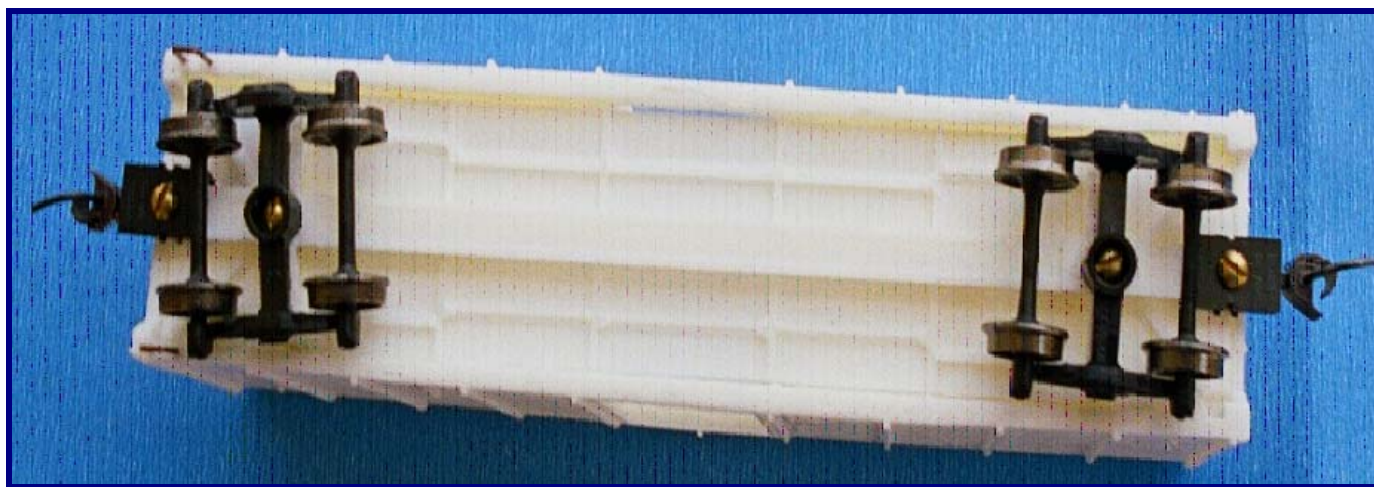


removing flash from the body and underframe. This goes quickly in front of the TV or listening to music. The bottom of the M-53 body has considerable thick flash. I cut most of it away with Xuron rail nippers, and finished up with 80 grit sandpaper and a mill file.

Underframe Construction

The underframe is too wide to fit into the body cavity, so I cut it down. None of my five kits has exactly the same body interior width, but all are close to 8 feet, 3 inches. You'll need to notch the ends of the underframe to clear the body casting corners. Once I was happy with how the underframe fitted, I drilled the bolsters for 2-56 screws. On my first car, I drilled the underframe for 0-80 screws to secure

mounting was too far back to be correct. The coupler pocket should extend 9 scale inches beyond the car body end. As they come from the factory, there is no designated "B" end on the underframe. I picked which end would go next to the brake wheel end of the car body and marked both the car body interior and the underframe with a black magic marker to make construction easier. On my first car, I drilled and tapped 0-80 screws into the shelf that the underframe rests on at each end of the car body. On my second car, I found that the shelf was large enough to take a 2-56 screw, and that using the shelf would help me extend the draft gear out far enough to give a decent representation of the Duryea underframe's extended draft gear boxes.

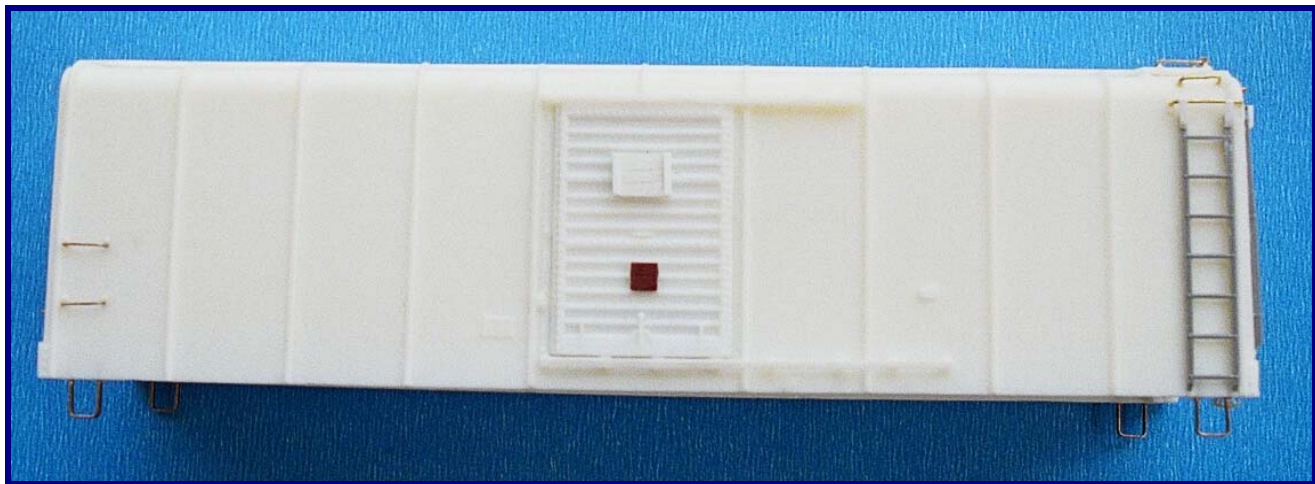
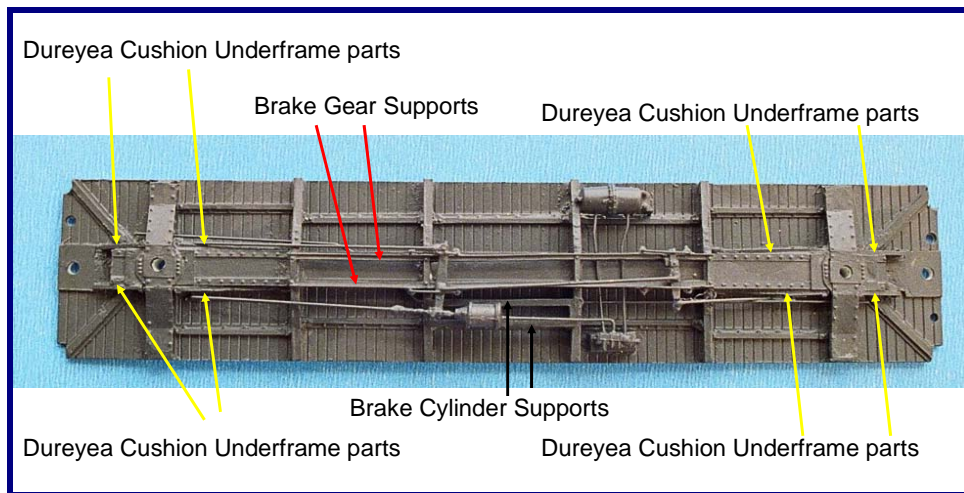


Underframe drilled and tapped for 2-56 screws to secure couplers.

I used Kadee 500 Bettendorf trucks on my first car and Accurail Bettendorf trucks on my second car. My models weighed 4 ounces, and I didn't feel the need to add any additional weight to them. I've test run my cars on 18" curves for several hours, and they've run reliably.

I added the Duryea cushion underframe parts to the underbody with ACC adhesive. See the photo. I

don't know how it works, but this is how I built it. Any corrections from readers are most welcome. As I write this, I'm roughly 1400 miles from the B&O Museum, so measuring the real thing is out of the question for me at the moment. The part that supports the brake cylinder needs to fit onto the small shelves cast into the two center crossbearers; it should not ride on the crossbearers, but fit just between them on the shelf.

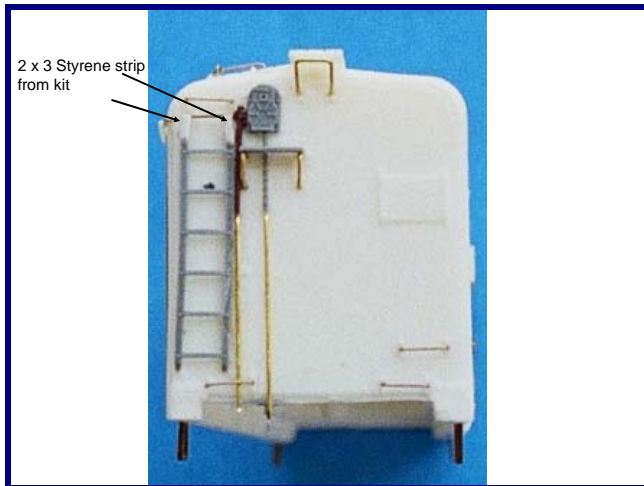


Carbody Construction

Ted Culotta's article has great instructions for making more exact end ladders. I compromised by using the kit parts and .019 wire for my layout quality model. I used the 2 x 3" styrene strip F&C provided to make the ladder top bits, cutting sections 1 scale foot long and filing the bottom portions at a 45 degree angle to simulate bends in the ladders away from the car body. On my first car, I made the grab irons that the tops of the extended ladders rest on stand too far out from the body; you may want to add the side ladders early on in construction to avoid this. I filed the bottoms of the kit ladders at a 45 degree angle to simulate the bottom portions connecting to the car body. The F&C kits have tack boards

molded onto the ends of the model, but my kits didn't have tack boards provided for the doors. I scratchbuilt 12 x 24 inch large tackboards from .020 styrene and 1 x 3 styrene strip. I used leftover parts from the Branchline AAR boxcar kits to represent the small door tackboards. While detailing the ends, I used the kit brakewheel from Tichy. I made my retainer valve line vertical. After painting the car, I was looking at photos of the preserved M-53a at the B&O museum and notice that the retainer valve line has a bend in it to clear the lower left grab iron. I left off cut levers, but they would be easy to add. You could make them out of .015 or .019 wire (larger size for durability) and Detail Associates SY2206 eyebolts. I bent roofwalk supports from .019 wire.

LOOKING AT LADDER PROFILE FROM SIDE
(LOOKING TO THE RIGHT OF THE LADDER
WOULD BE THE BOXCAR SIDE)



Paint Schemes

The Sunshine instructions list the various paint schemes the M-53 boxcars had over their service lives. For my first F&C car, I used the F&C decal

References

Bossler, Craig. B&O Color Guide to Freight and Passenger Equipment. Morning Sun Books, 1996.

Culotta, Ted. Essential Freight Cars: 23, Wagon-top and ribbed side boxcars. July 2005 Railroad Model Craftsman, pages 95-99.

B&O Freight Car Equipment: A Summary of B&O Summary of Equipment books issued during that time. Compiled by Richard K. Daniels. Included in June 2001 "Several Short Blasts from the Head End."

Sunshine Models B&O Boxcar Lettering Arrangements 1920s-1960s (single Door 40')

Sunshine Models Prototype Data Sheet 42A: B&O Wagon Top Boxcars

Bill of Materials

Accurail

Bettendorf trucks

Funaro and Camerlengo

6930 M-53 with plain doors

6931 M-53 with Creco Doors

6932 M-53 with Youngstown Doors

6933 C16 Express Boxcar

Kadee—

#500 Bettendorf trucks

#58 couplers (or your preference)

sheet to model M-53 380554. I model primarily 1947-1950. According to Sunshine's sheet on B&O boxcar lettering arrangements, the M-53 class was built with the "Early Kuhler" lettering scheme (Late 1937-early 1940), while the M-53a class was built with the "Wartime" scheme (Late 1940-Mid 1945). I elected to finish the car in what Sunshine calls the "Post War 13 Great States" scheme, applied from mid 1946 to mid 1955. I painted the car body with Polly Scale's 414354 Special Oxide Red. I painted my underframe Polly Scale's 414137 Grimy Black, mainly to help the details show up better in photos. On my Sunshine cars, I painted the underframe black to represent an underframe coated in car cement.

Decals

The F&C decals separate from the sheet quickly once wet. They respond well to Walther's Solvaset. The sheet includes material for more than one car as long as you want them to have different lettering schemes.

Conclusions

If you've built two or three of the Red Caboose or Tichy boxcar kits and are happy with the results, I think you're ready to try a resin boxcar or gondola. I don't recommend resin hoppers (covered or otherwise) as first resin kits; as there is much more to align (and lots more to go wrong). With the one piece body, the F&C kits make things much easier for the HO modeler to build a small fleet of these cars.

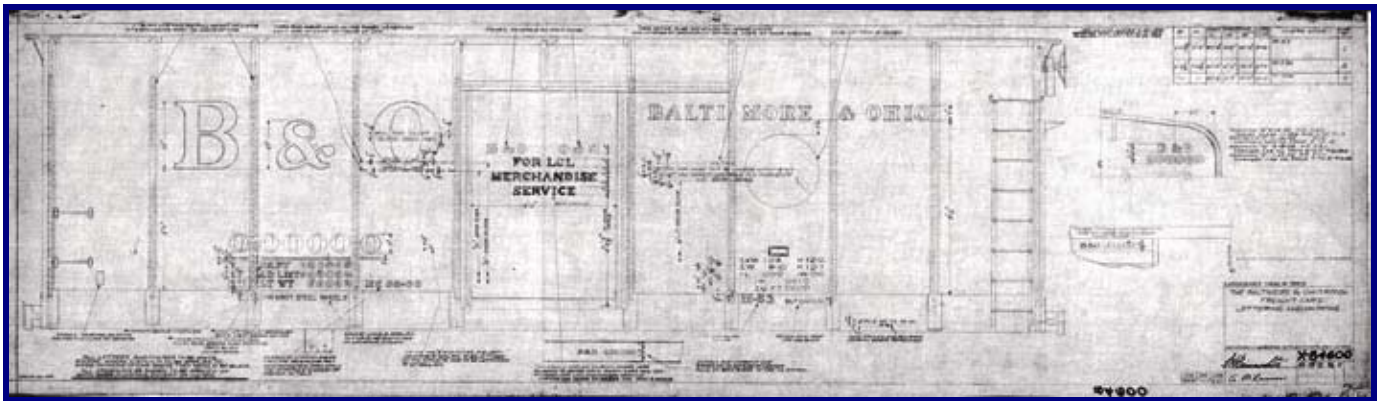
Miscellaneous

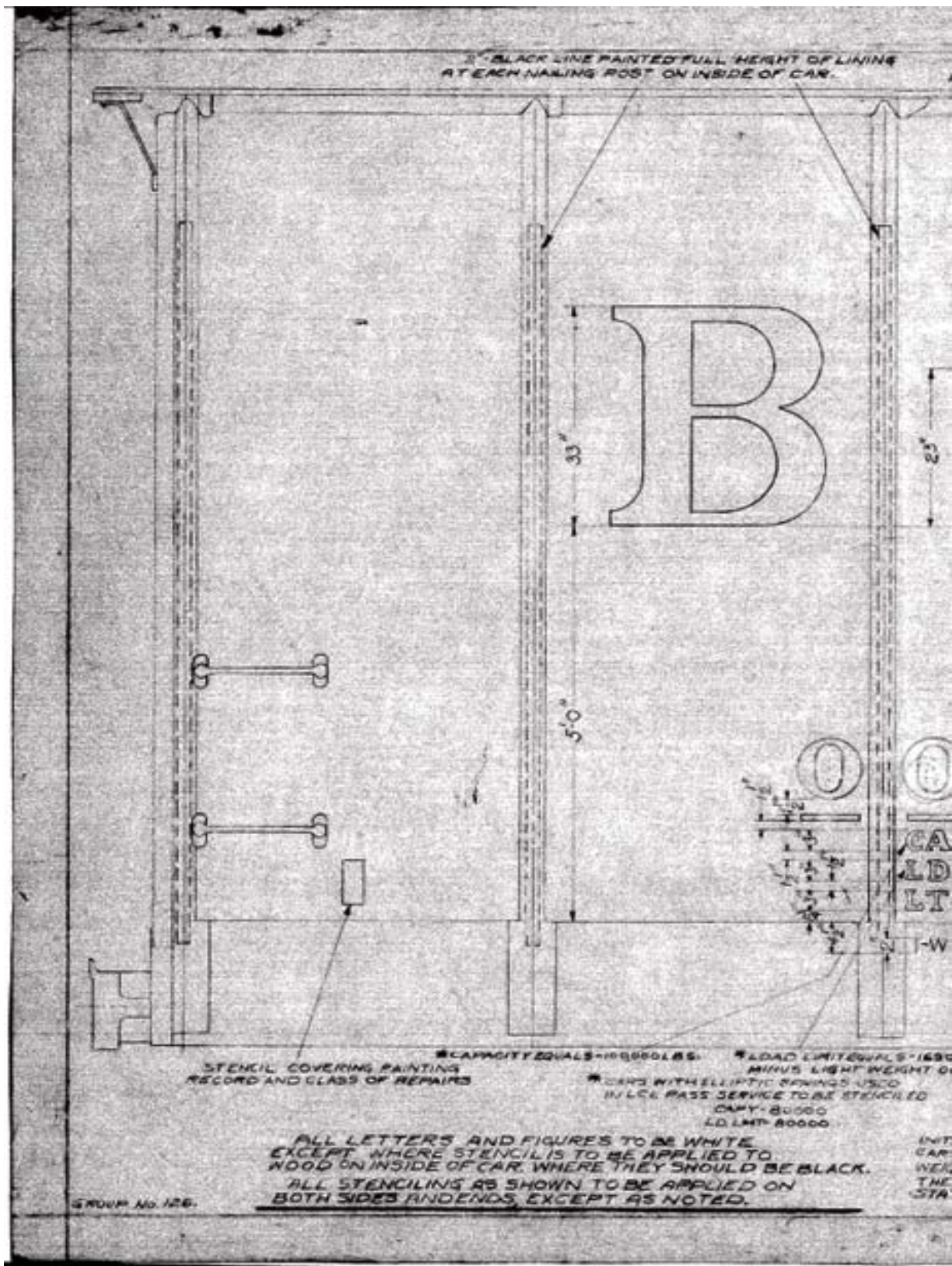
2-56 x 3/16" screws
.019 brass wire

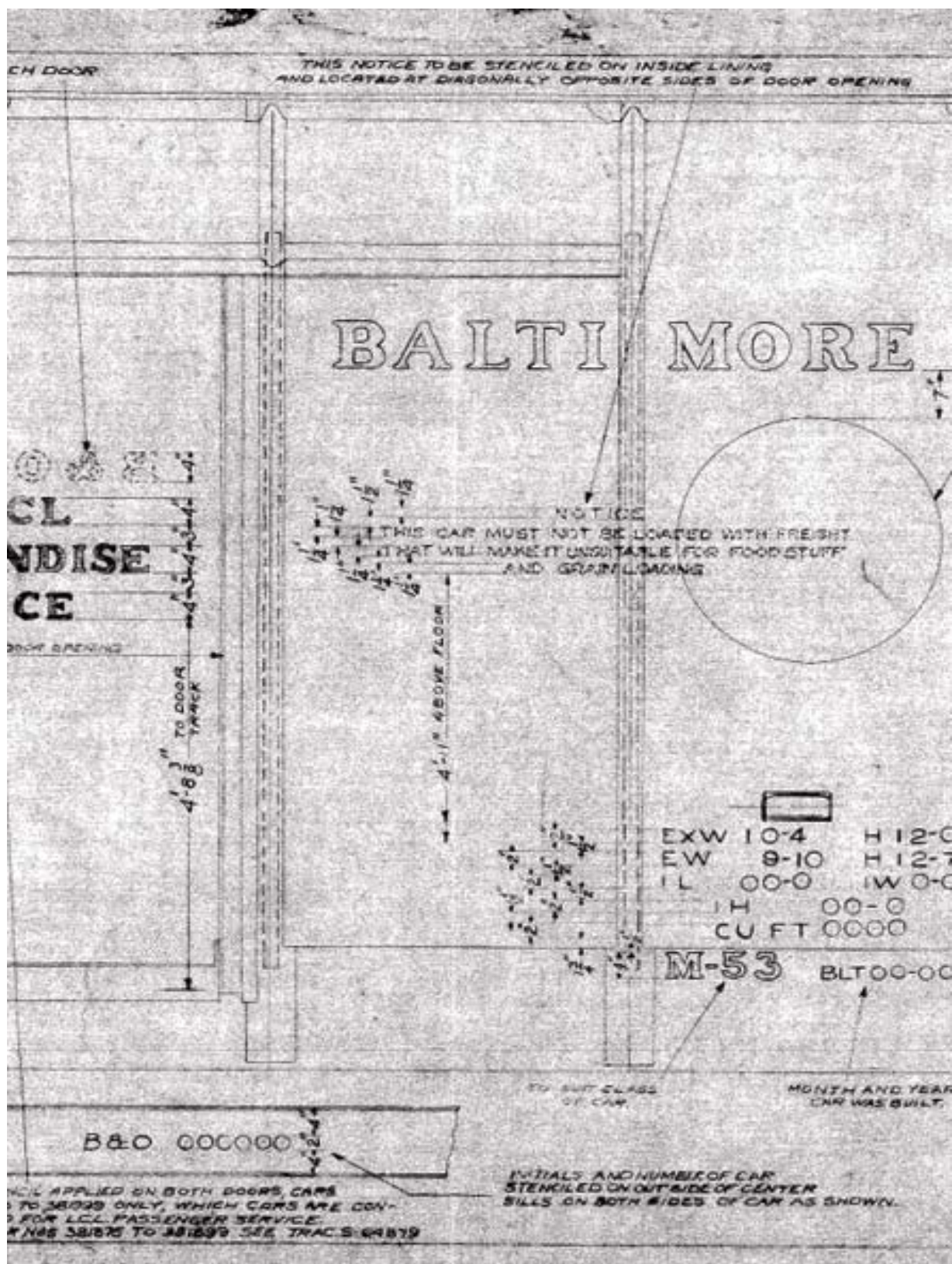
SPECIAL FEATURE

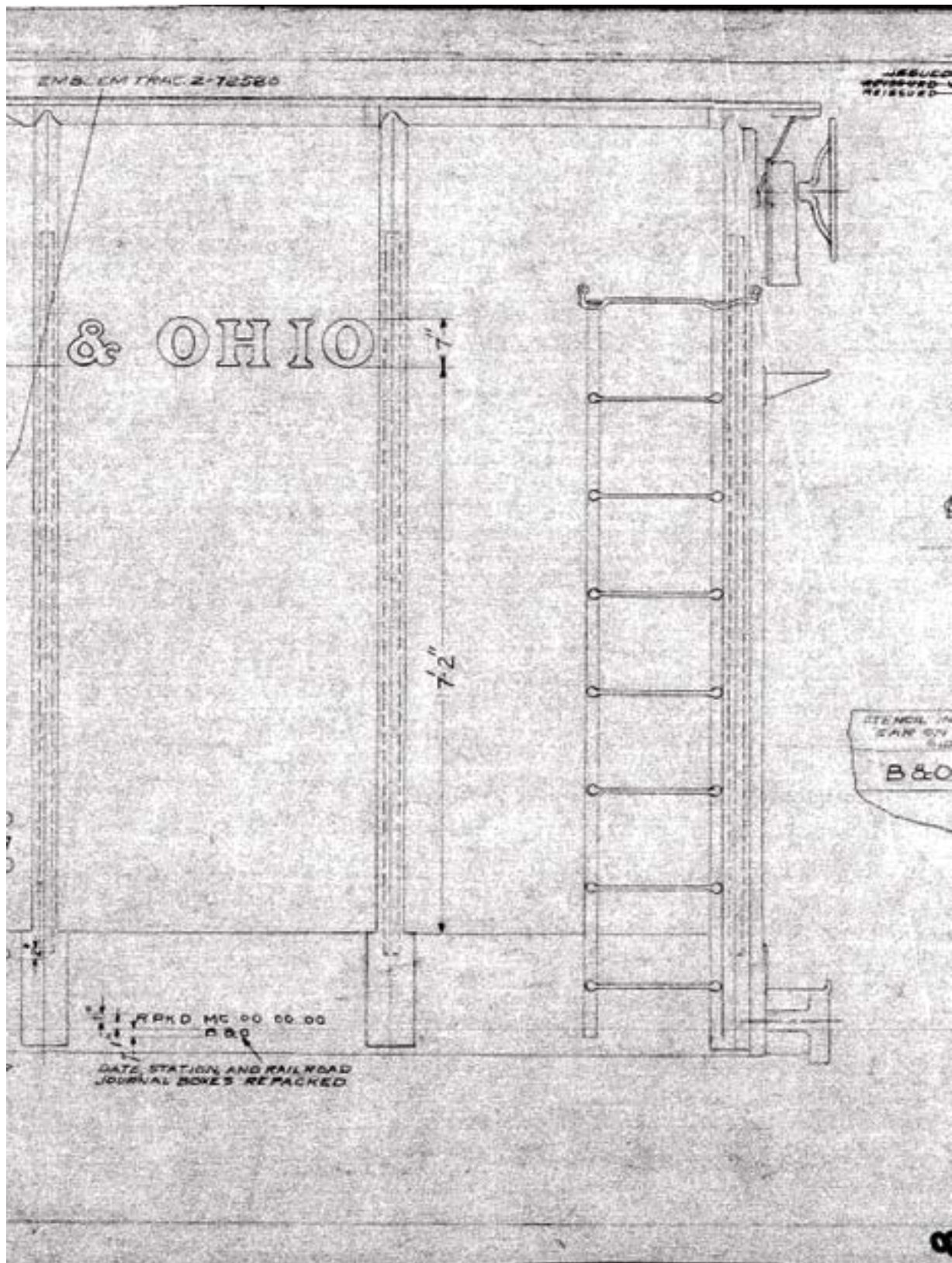
1956 M-53 Lettering and Marking Drawing

Thanks to Mike Lytle for sharing a scanned image of a blueprint (the blueprint was converted to a B&W image, a black line work on white background) of the following: Baltimore and Ohio R. R. Co., Freight Cars, Lettering and Marking Drawing for an M-53,a,b, drawing #X-84600 Rev. E, 1956. The original of this drawing is working its way into the Archives.









NEW LETTER 4-26-1955
 IN LETTER 12-1-1954
 8-28-1954

B	A	SIDE DIMENSIONS				CARS	WHERE USED	LINE NO.
		TL	IN	IH	CU FT			
6'-0"	7'-4"	40'-6"	9'-2"	10'-0"	3712	M-53	1	
6'-9"	7'-3"	40'-6"	9'-2"	10'-0"	3712	M-53A	2	
—	—	40'-6"	9'-2"	10'-0"	3712	M-53B	3	

REVISION "B" 4-12-55 K.R. C.E.C.
 ADDED CLASS AT 53B AND LINE No. 3
 REVISION "C" 10-24-55 K.R.G.
 CHANGED CAR NO. FROM 7" TO 3"
 REVISION "D" 12-13-55 K.P. C.E.C.
 CHANGED CAR NO. FROM 9" TO 7" FIGURES
 REVISION "E" 1-23-56 K.P. C.E.C.
 CHANGED CAR NO. FROM 7" TO 9" FIGURES

1/2" FLOOR
 LEFT STENCILS ———— FROM 2-15-50?

SUPERSEDES TRAC X-7441B
 THE BALTIMORE & OHIO R.R. Co.
 FREIGHT CARS.
 LETTERING AND MARKING.

MECHANICAL ENGINEERING DEPT. BALTIMORE MD. 3-28-1955

H. C. ...
X-84600
 A B C D E

TRC	TRC	CHK
REX	—	C.B.C.

G. B. Lawrence

4000

PLANNED FOR THE NEXT ISSUE

**HO Interlocking Tower
HO Scale M-24a Cement Service Boxcar
B&O Carfloat #199**

TOPICS IN NEED OF COLLABORATION FOR FUTURE ISSUES

(CONTACT THE EDITOR TO ASSIST WITH ARTICLES ON THESE TOPICS)

**Modeling HO Leased New Jersey Central Hoppers
Modeling all B&O Hoppers in HO Scale**

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